Utilization of three low cost bio adsorbents in their native as well as carbonized forms for the removal of Cobalt (II) from aqueous solutions

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These three substances were crushed and ground to powder as it is

Used for the bio sorption of cobalt (II) from aqueous solutions and found to have adsorption capacity as 15.9 mg/g. and these substances removed 99.8% of the metal ions

ABSTRACT

Groundnut seed cake powder (GNSCP), sesame seed cake powder (SSCP) and coconut cake powders (CCP) were used in the bio-sorption of cobalt(II) from aqueous solutions. These powders in their native as well as carbonized forms were used for the removal of cobalt(II). Effect of pH, contact time adsorbent dosage, temperature and initial metal concentration on the uptake of the metal ions were investigated. Kinetic studies for the bio-sorption of cobalt(II) showed that the process followed a pseudo second order kinetics for both the forms of the

adsorbents. Isothermal studies indicated that Langmuir isotherm fits for the adsorptive removal of cobalt(II). With a maximum adsorption capacity of 5.0 mg/g using both the forms of the adsorbents showed an effective and efficient removal 99.8% of cobalt(II)from aqueous solutions. The three adsorbents chosen for the present study, have not been used so far in the removal of cobalt(II). The present paper

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